

MainTrain

OTTAWA 2018

Connect, Learn, Contribute

CONFERENCE PROGRAM
SEPTEMBER 24 TO 27

Maintenance, Reliability and Asset Management



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- Asset Management ● Predictive Maintenance ● Condition Monitoring
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Table of contents:

Welcome to MainTrain 2018.	4
Message from PEMAC President Sue Lubell.	4
Message from PEMAC Executive Director Cindy Snedden.	5
Message from MainTrain Conference Chair Devesh Shah	6
Our Sponsors.	8
Media Partners.	10
Our Exhibitors	11
Conference Tours	13
MainTrain 2018 Author's Corner	14
MainTrain 2018 Exhibitor Showcase	15
Conference Floor Plan	15
Conference Schedule at-a-Glance	16
Speakers and Presenters	21
Keynote Speakers.	21
Take the Test: ICML, CMRP and CAMA Exams.	23
PEMAC Member's Meeting	23
Conference Agenda Day 1	25
Conference Agenda Day 2	28
Conference Agenda Day 3	31
Conference Agenda Day 4	38
Asset Management Professional (AMP) Certification.	44
Maintenance Management Professional (MMP) Certification.	44
Becoming a Certified Asset Management Assessor Course	44
Acknowledgements	46
Tell Us How We Did.	46
Looking Ahead to MainTrain 2019.	back-cover

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Welcome to MainTrain 2018

Message from PEMAC President Sue Lubell

On behalf of the PEMAC Board of Directors and PEMAC, I would like to extend a warm welcome to the 2018 MainTrain Conference here in Ottawa – our nation's capital! We hope that you enjoy not only the conference, with its extensive technical programs and exhibits, but also all that this wonderful city has to offer. MainTrain addresses a wide range of Asset Management, Reliability, and Maintenance topics through presenters, sponsors, and attendees' involvement. In keeping with the theme of "Connect, Learn, and Contribute," we encourage you to learn and contribute to the content of the conference, while connecting with local and national colleagues. Thank you to the presenters and attendees for your contributions to the conference, to our colleagues on the MainTrain organizing committee, and to our sponsors and exhibitors who have helped to make this conference possible.

Sue Lubell, President, PEMAC



About PEMAC

Vision

PEMAC is a national not-for-profit association providing global leadership, education, and certification in asset management practices.

Mission

PEMAC's mission is to improve its members' professionalism, safety, performance, and outside recognition, by providing specialized education and certification, undertaking research, providing forums for the exchange of information, and acting as a public voice for its members and the profession.

PEMAC's membership comprises more than 1,507, reliability, and asset management practitioners. For more information about PEMAC, visit www.pemac.org. Be sure to follow us on LinkedIn, Facebook, and Twitter @PEMACexec for the latest updates as well.



Message from PEMAC Executive Director Cindy Snedden

Welcome to Ottawa and to MainTrain 2018!

Conferences are very interesting expressions of human creativity. Every year a team of PEMAC staff and volunteers begin with a broad vision of the MainTrain conference as an opportunity for all of the participants to connect, learn, and contribute to the development of maintenance, reliability, and asset management as a professional area of practice. To that vision we add our learning from past years, and we start with something of a black-and-white line art drawing. Over the course of the year the lines get coloured in by the staff, volunteers, sponsors, exhibitors, abstract submitters, selected speakers, and delegates who respond to the vision and offer their contributions. But the real magic happens after we all arrive. The now colourful page comes to life in real time and it is always, somehow, more than we hoped. Because not only do people naturally connect, learn, and contribute when they come together, they also create!

So we'd like to thank you all for sharing in the amazing process of conference-building. No matter which role you will play in the conference, if you are reading this you have already made a contribution to it. We are very confident that through your already-demonstrated commitment to the cycle of connecting, learning, contributing, and creating, you'll receive benefits that enable you to contribute to the continuous improvement of the organizations you serve as well.

Enjoy!

Cindy Snedden, P.Eng.

PEMAC Executive Director



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Message from the conference chair,
Devesh Shah, Program Manager, Maintenance Manager,
City of Ottawa

Dear Colleagues,

On behalf of PEMAC and the MainTrain 2018 Committee, I'm honoured and delighted to welcome you to the conference in the beautiful city of Ottawa, our nation's capital. Ottawa has the most educated population among Canadian cities and the highest quality of life. And it has been regarded as one of the best places to live in the world. It's the technology hub of the north and home to a number of post-secondary research and cultural institutions and national museums.

It's a great pleasure to welcome you to MainTrain in Ottawa, PEMAC's 20th annual conference. Over the past years, PEMAC has grown to be the major national conference in the areas of Plant Engineering, Maintenance and Asset Management. MainTrain 2018 continues the tradition of high-quality, broad-based, and cross-industry participation in all areas of maintenance, reliability, engineering, and asset management.

This time, we've added special tracks on technology, as well as presentations in French. I'm excited about the record number and quality of presentations and the wide variety of ideas that experts and practitioners will bring into our fold. I'm also particularly excited about our keynote speakers.

My sincere thanks to all the presenters and attendees for their valuable contributions to the conference, to our colleagues on the MainTrain organizing committee, and to our sponsors and exhibitors who have helped to make this conference possible. Without their outstanding work and months of planning, we wouldn't have such an excellent conference.

I hope you'll find the conference both enjoyable and valuable—and also find time to enjoy the cultural and natural beauty of Ottawa.

Best Regards

Devesh Shah, P.Eng., MBA



Services & Solutions from SKF - let's talk about Defect elimination

We believe the **SKF Defect elimination program** would benefit virtually any PEMAC member. It has saved Canadian customers tens of millions of dollars – with high return on investment.

A defect is defined as anything that erodes value, reduces production, compromises health, safety, or the environment, or creates waste.

Defect elimination is a reliability and business improvement tool that seeks to proactively identify these defects, allocate them a priority, and then identify and eliminate root causes.

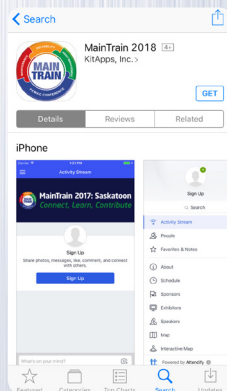
Talk to SKF about your organizations goals, we would love to help you not just reach them – but exceed them.

Get the App!

PEMAC is excited to offer a MainTrain 2018 Event App this year! Get all the latest details about the conference, the speakers, the sessions and an interactive map. You can even complete your surveys online - all from the ease of your phone or tablet.

- Create your own personal schedule by marking the sessions, you want to attend as favourites.
- Complete session surveys online, easily, and quickly!
- See what the world is saying about MainTrain in the news feed and join the conversation.

If you haven't already installed the App be sure to do so now. Visit your App Store and search for **MainTrain 2018**. Once installed, launch the app and create an account for yourself by simply typing in your first and last name. Now you're ready to discover all there is to know about the conference!



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Recognized as one of Canada's Great Places to Work, Microsoft Canada Inc. provides nationwide sales, marketing, consulting and local support services. Headquartered in Mississauga, Microsoft Canada has nine regional offices across the country dedicated to empowering people through great software. Microsoft Canada is a creative workplace which attracts the best and brightest talent in the IT industry who bring an ever evolving vision of the future to reality.

Microsoft software helps businesses and consumers to reach their full potential, however they define it. Woven throughout daily life, whether it be work or play, Microsoft technologies flourish when they get into the hands of millions of Canadian partners and customers enabling innovation often in new ways.

Microsoft Canada is equally passionate about committing to Canadian communities. Since its inception, Microsoft Canada has had a corporate giving philosophy that goes beyond financial donations to champion inventive forms of philanthropy. For more information on how Microsoft Canada has joined forces with organizations across Canada to make a difference and invest in local communities visit <http://microsoft.ca/citizenship>



SDT Ultrasound Solutions provides ultrasound solutions that give our customers a greater understanding about the health of their factory. We help them predict failures, control energy costs and improve product quality while contributing to the overall uptime of their assets. www.sdttheardmore.com



SKF Group is the leading global supplier of bearings, seals, mechatronics, lubrication systems and services which include technical support, maintenance and reliability services, engineering consulting and training. The SKF Life Cycle Management approach applies SKF's expertise in a wide range of technical areas to help customers, both OEMs and the aftermarket, optimize machine productivity and efficiency. Available worldwide, SKF asset management services can help your operation develop strategies and tactics to achieve bottom-line results. www.skf.com/ca

- Assessments and benchmarking
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- Balanced scorecard
- Key performance indicators
- Risk analysis
- Maintenance strategy review
- Asset performance review
- Inventory management
- Work planning and scheduling
- Application engineering
- Reliability engineering
- Life cycle cost management
- Computerized Maintenance Management Systems or Enterprise Asset Management Systems support
- Spare parts optimization
- Defect elimination
- Lubrication management



UE Systems manufactures and supports ultrasound instruments used for condition monitoring and energy conservation programs. These portable instruments are used to locate electrical faults such as arcing, tracking and corona, early warning signs of faulty bearings, find compressed gas and vacuum leaks as well as test for faulty steam traps and valves. www.uesystems.com

GOLD



ARMS Reliability, a global consulting firm specializing in helping industry get more from their assets, avoid unplanned downtime and reduce operating costs. Since 1995, ARMS Reliability has been at the forefront of proactive asset management strategies for a host of blue chip companies around the world. These companies have entrusted ARMS Reliability with delivering business goals through effective asset management and improvements in operational productivity. With offices in North America, Latin America, Europe, and Australia, ARMS Reliability has experience across a wide variety of industries, including mining, oil and gas, water utilities, power generation (hydro, coal fired generation, gas, wind generation), power distribution, manufacturing, rail, communications, and safety systems. www.armsreliability.com

SILVER



Hippo CMMS is a powerful, affordable, and user-friendly web-based maintenance management software. Its simple platform and essential CMMS features suit a variety of industry needs, including hospitals, university campuses, manufacturing plants, hotels and more. The graphical interface, unlimited user access, and friendly support team make maintenance management easy. Hippo has been instrumental in streamlining maintenance operations in more than 800 organizations since 2002. Core software features include - Preventive Maintenance - Work Order Tracking - Facilities Management - Inventory Management - Mobile Maintenance Solutions - Interactive Site Plans www.hippocmms.com/



PROSYGMA is a management consultant company specialized in Reliability and Maintenance. We are committed to working with our clients as a strategic partner to achieve efficient, reliable, and profitable asset management. Our expertise is focused around maintenance and reliability best practices such as lean maintenance, planning and scheduling, criticality analysis, spare parts management, failure analysis, preventive and predictive maintenance optimization and a wide variety of other best practices targeted to make our clients better. We also offer the possibility of outsourcing our maintenance planners, supervisors and engineers to our clients to support the deployment of best practices. Learn more: www.prosygma.ca

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Machinery & Equipment MRO magazine offers practical information for maintenance, reliability and asset management professionals in the manufacturing, utilities and resource industries. The award-winning publication has served machinery and equipment maintenance professionals across Canada since 1985. Our comprehensive content mix includes maintenance case studies, technical features on asset performance and repair, best practices in reliability, process implementation trends, as well as field intelligence on the latest industrial and manufacturing products and technological advances. Contributors from industrial plants, supplier companies, columnists and the editorial staff are experts with specialized knowledge and experience in their fields. www.mromagazine.com/

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CINDE is Canada's non-profit, member-based, technical society dedicated to the people and companies engaged in non-destructive evaluation (NDE), non-destructive testing (NDT), and inspection. CINDE offers world-class NDT training, is a full-service government approved certification examination centre, and offers comprehensive member benefits. For more information, please visit: www.cinde.ca and events.cinde.ca.



The International Council for Machinery Lubrication (ICML) is a NFP organization founded to facilitate growth and development of machinery lubrication as a technical field of endeavor. ICML's Machine Lubrication Technician (MLT), Machine Lubricant Analyst (MLA) and Laboratory Lubricant Analyst (LLA), offered global since 2001, are internationally recognized and adopted by ISO as 18436-4 & 18436-5, respectively. www.lubecouncil.org



Northern Lakes College delivers PEMAC's Maintenance Management Professional (MMP) Certification Program LIVE Online. Students and instructors connect with each other at the same time without having to leave home or work, and they can take their classroom with them wherever they go as long as they have Internet, device and sound. Imagine the possibilities of networking with maintenance professionals across the country and around the world while learning about maintenance best practices and earning your MMP designation. northernlakescollege.ca

Our Exhibitors



Benchmark PDM provides maintenance and reliability solutions to the industrial market through instruments/tools, services and training to ensure machine assets are operating at maximum efficiency. As Canada's National EASY-LASER® Distributor, we provide shaft alignment tools & precision measurement systems for roll alignment, bore alignment, machine tools and much more.



Carver PA Corporation As industry leader CARVER PA CORPORATION has dedicated the last 20 years to helping organizations around the world attain operational excellence, reliability and sustainability from start-up operations to established sites. Carver has one of the most comprehensive, in-house foundation of technical knowledge and experience and provides its clients holistic, scalable solutions that are tailored to their specific requirements. These include technical services, training and staffing (permanent and contract).



CNAM is the national association of public infrastructure asset management in Canada. Our government and private sector members develop policy, tools and technologies which we share to improve the level of service for public infrastructure assets throughout the country. Our mission is to advance asset management practices through leadership, innovation and collaboration.



CPS Current Power Services offers powerful solutions to protect your critical assets. Our power quality solutions help industrial facilities and utilities identify looming equipment failures before they occur. We are the Canadian distributor for PQView, the industry leading power quality monitoring software. Benefit from our 30+ years of experience with our PQ-OnSite service which collects and analyzes the data on your behalf. CPS Current Power Services Ltd. is an affiliate of Energy Ottawa.



DIMOMaint is a worldwide company providing CMMS - Maintenance software solution. We have two main products that meet the needs of companies: a complete and robust on premise solution and a user-friendly cloud based system, mobility tools enhance our range of products. With a customer base of 3,500 companies across the world, DIMOMaint is an expert of CMMS implementations.



Eruditio, LLC is an adult education firm that stands out from the rest. Based in Charleston, South Carolina, our team has decades of experience applying core skills associated with Asset Management, Lean Six Sigma, Organizational Change Leadership, and other challenging subjects. We expect our learners to go back to their companies and make a real difference in operations and the bottom line. Our sophisticated training approach, which blends customized subject matter, experiential training, project-based learning, online support, and comprehensive personal coaching, enables high knowledge transfer and retention.



As a leading provider of lubrication analysis and asset management solutions, **Fluid Life** uses its software, training, tools and programs to help keep your equipment running at peak performance. From analysis and evaluation to planning and strategy, we have the expertise to help you achieve a higher level of reliability.



NRX AssetHub, powered by HubHead, provides maintenance and reliability professionals at asset-intensive businesses with world-class software solutions for analyzing, visualizing, building, editing, organizing, approving, and sustaining high quality Asset and Maintenance Master Data for their Enterprise Asset Management (EAM) and Computerized Maintenance Management (CMMS) systems.



IRISS is the global leader in Electrical Maintenance Safety Devices & Solutions used in power generation and power distribution systems by employing infrared, ultrasound, temperature monitoring and TEV technologies. EMSD technologies warn of potential equipment failures before they occur, maximizing operational efficiency and reducing risk and cost.



Lubrigard can help you overcome the major hurdles to achieving world-class lubrication by providing you with a specific action plan to improve equipment reliability and rescue your maintenance team from constantly "putting out fires." Lubrigard has the knowledge and support to provide you with solutions to your current lubrication needs.



One Eye Industries designs and manufactures a patented magnetic filtration technology. Our filters have applications within all industries as an environmentally-responsible alternative to traditional filtration. Unlike conventional methods, this technology has minimal flow restriction, is cleanable and reusable and provides sub-micron level filtration efficiency.



OptiTest helps maintenance and plant leaders to identify the performance potential of technical employees by administering technical hands-on troubleshooting assessments on simulators. Our tests evaluate the performance potential of incumbents and potential employees prior to hire. The tests are the most accurate, the most precise and the most used worldwide. The assessment technology confirms whether or not a candidate/employee is equipped to perform on the operation floor. A very unique methodology that increase production.



PRUFTECHNIK provides solutions for shaft alignment, roller alignment, condition monitoring, ultrasound and services in the areas of industrial maintenance. PRUFTECHNIK helps you to optimize your machines by saving costs and increasing the reliability of your assets. Brands: ROTALIGN touch, OPTALIGN Smart, SONOCHEK, VIBXpert II, VIBSCANNER 2, VIBGUARD, SONOCHEK.



Quartic.ai is a technology company focused on deploying Artificial Intelligence (AI) and IIoT-based solutions that accelerate implementation of Industry 4.0. Led by industrial automation and reliability veterans, Quartic.ai's mission is to democratize the use of AI in manufacturing by enabling subject matter experts to build AI applications without extensive data science or programming knowledge.



RDI Technologies is improving the way you do maintenance everyday with the release of its flagship product the Iris M. The Iris M measures deflection, displacement, movement, and vibration using simple video cameras in conjunction with our proprietary software, allowing users to visualize vibration in real time. It's highly accurate and easy to use, and will launch your maintenance program into the 21st century.



Predictive Maintenance Corporation/Tribologik® operates two ISO 17025:2005 oil, coolant and fuel analysis laboratories in Montreal and in Hammond IN near Chicago to monitor the condition and improve the performance of large industrial, mining and transport equipment for global corporations and public utilities in Canada, the USA and Latin America.

Conference Tours

PEMAC is pleased to be offering two tours at this year's conference. These off-site tours are a great way to see behind the scenes and learn more about how these organizations are managing their maintenance, reliability, and asset management strategies. To sign up for any of these tours, please visit the registration desk.

Ottawa Fleet Tour

The tour will consist of a brief introduction to our fleet structure and operations, a tour of the maintenance facility, and a stop in the parts area as well. A Q&A with fleet staff will follow the tour. Transportation will be provided from the Brookstreet Hotel and back.

Date: Monday, September 24 **Departure Time:** 9:00 **Return Time:** 12:00

The Diefenbunker

Canada's Cold War Museum has been named Canada's most significant Cold War site for visitors interested in culture and history. This National Historic Site of Canada is an underground nuclear bunker built in secrecy during the height of the Cold War. As the Central Emergency Headquarters, it was meant to house the top officials of the government and military during the risk of nuclear attack. The tour of this unique facility will take you through recreations of government rooms, living quarters, and cryptographic areas. Some of the focal points include the Prime Minister's suite, the War Cabinet Room, the Medical Centre, and the Bank of Canada Vault. Transportation will be provided from the Brookstreet Hotel and back.

Date: Tuesday, September 25 **Departure Time:** 13:00 **Return Time:** 16:30

AUTHOR'S CORNER

PEMAC welcomes a number of authors to MainTrain conference and invites conference participants to join each of them one on one in our Author's Corner featured in the exhibitor showcase. Come visit each of these authors at the dedicated time.

Author	Co-Author	Book	Time 1	Time 2
James R Picknell	Jesus Sifonte	Reliability Centered Maintenance - Reengineered	Wed 3:45pm	Thurs 9:45am
Suzane Greeman, ASQ-CMQ/OE, CAMA, CAMP, CMRP		Risk-based Asset Criticality Assessment (R-b ACA®)	Tues 5:30pm	
Susan Lubell, Steppe Consulting Inc		Root Cause Analysis Made Simple - Driving Bottom Line Improvements by Preventing One Failure at a Time	Tues 11:45am	Thurs 12:00pm

MainTrain Exhibitor Showcase

PEMAC is very excited to welcome a wide range of organizations that will be participating in our exhibitor showcase this year. Be sure to drop by and visit each of them in the Newbridge Ballroom Foyer, and gain some valuable insight for your own organization.

Networking Reception / Exhibitor Hall Grand Opening Sponsored by: UE Systems: Join us for this year's networking reception in the exhibitor showcase on Tuesday, September 25 from 16:30 to 18:30 to meet and mingle with fellow delegates, sponsors, and exhibitors. Refreshments will be served.

Walking Tour: Join us for a walking tour of the exhibits during the welcome reception. Small groups of participants will be guided through the exhibitor showcase, stopping at each exhibit for two minutes to learn more. Listen for the bell to signal your transition to the next exhibit.

Vender Bingo: Each delegate is given a bingo card (included in your conference bag) with a square corresponding to each exhibitor booth. Delegates are encouraged to visit each booth to acquaint themselves with our exhibitors and get their card signed. Once all of your squares have been signed, turn your completed card into the PEMAC table for your chance to win a prize.

Exhibitor Showcase Hours:

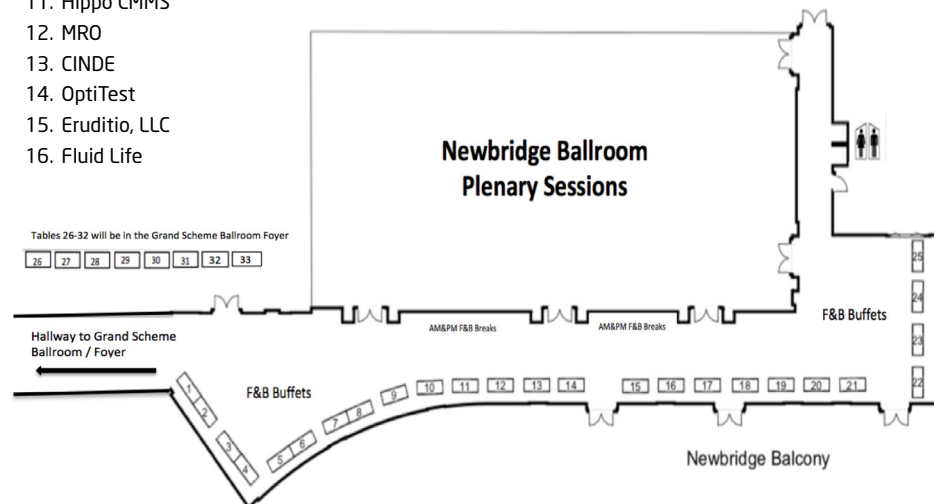
Tuesday, September 25, 16:30 - 18:30 Opening

Wednesday, September 26, 07:15 - 17:00

Thursday, September 27, 07:15 - 13:00

Conference Floor Plan

- | | | |
|-----------------------------|--------------------------------|---|
| 1. UE Systems | 17. CPS Current Power Services | 25. Predictive Maintenance Corporation/Tribologik |
| 2. UE Systems | 18. One Eye Industries | 26. PEMAC |
| 3. SKF Group | 19. Benchmark PDM | 27. Northern Lakes Collage |
| 4. SKF Group | 20. DIMOMaint | 28. Author's Corner |
| 5. Microsoft | 21. Lubrigard | 29. IRISS |
| 6. Microsoft | 22. Quartic.ai | 30. ICML |
| 7. SDT Ultrasound Solutions | 23. NRX AssetHub | 31. RDI Technologies |
| 8. SDT Ultrasound Solutions | 24. Exhibitor | 32. PRUFTECHNIK |
| 9. ARMS Reliability | | 33. Carver PA Corporation |
| 10. Prosygma | | |
| 11. Hippo CMMS | | |
| 12. MRO | | |
| 13. CINDE | | |
| 14. OptiTest | | |
| 15. Eruditio, LLC | | |
| 16. Fluid Life | | |



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SUIVEZ-NOUS

Conference Schedule at a Glance

Monday, September 24, 2018 (Workshops)

0715 - 0800	Registration & Breakfast <i>Room: Newbridge Ballroom Foyer</i>			
0800 - 0825	Welcome by Microsoft <i>Room: Newbridge Ballroom</i>			
0825 - 0850	Keynote by Susan Lubell P.Eng MBA MMP CAMA, National President PEMAC Conference Welcome & Opening <i>Room: Newbridge Ballroom</i>			
0900 - 1000	IIoT, Big Data and Artificial Intelligence Fundamental Workshop - In partnership with Quartic.ai Blair Fraser, Rajiv Anand & Xiaozhou Wang <i>Room: Delivered</i>	iCAST: Introduction to Critical Asset Surveillance Technology Rudy Wodrich & Drew Walts <i>Room: Sealed</i>	MMP Module 1 "An Integrated Strategy for Maintenance Management" Day One Leonard Middleton <i>Room: Signed</i>	Becoming a Certified Asset Management Assessor Day One Suzane Greeman & Dharmen Dhaliyah <i>Room: Shakers</i>
1000 - 1015	Break			
1015 - 1200	(Continued) IIoT, Big Data and Artificial Intelligence Fundamental Workshop Blair Fraser <i>Room: Delivered</i>	(Continued) iCAST: Introduction to Critical Asset Surveillance Technology Rudy Wodrich & Drew Walts <i>Room: Sealed</i>	(Continued) MMP Module 1 "An Integrated Strategy for Maintenance Management" Day One Leonard Middleton <i>Room: Signed</i>	(Continued) Becoming a Certified Asset Management Assessor Day One Suzane Greeman & Dharmen Dhaliyah <i>Room: Shakers</i>
1200 - 1300	Lunch Sponsored by: Hippo CMMS			
1300 - 1430	(Continued) IIoT, Big Data and Artificial Intelligence Fundamental Workshop Blair Fraser <i>Room: Delivered</i>	It Is Time to Rethink Asset Criticality - Introducing Risk-Based Asset Criticality Analysis (R-b Aca)! Suzane Greeman & Jesús R. Sifonte <i>Room: Sealed</i>	(Continued) MMP Module 1 "An Integrated Strategy for Maintenance Management" Day One Len Middleton <i>Room: Signed</i>	(Continued) Becoming a Certified Asset Management Assessor Day One Suzane Greeman & Dharmen Dhaliyah <i>Room: Shakers</i>
1430 - 1445	Break Sponsored by: Prosygma			
1445 - 1630	(Continued) IIoT, Big Data and Artificial Intelligence Fundamental Workshop Blair Fraser <i>Room: Delivered</i>	(Continued) It Is Time To Rethink Asset Criticality - Introducing Risk-based Asset Criticality Analysis (R-b Aca)! Suzane Greeman & Jesús R. Sifonte <i>Room: Sealed</i>	(Continued) MMP Module 1 "An Integrated Strategy for Maintenance Management" Day One Leonard Middleton <i>Room: Signed</i>	(Continued) Becoming a Certified Asset Management Assessor Day One Suzane Greeman & Dharmen Dhaliyah <i>Room: Shakers</i>
1700 - 1900	Hospitality Suite Sponsored By: Microsoft <i>Room: Connections Lounge (18th floor Brookstreet Hotel)</i> Dine Around (Sign up at registration)			
1900 - 2030	Members' Meeting <i>Room: Delivered</i>			

Ottawa Fleet Tour

Tuesday, September 25, 2018 (Workshops)

0715 - 0800	Registration & Breakfast Sponsored by: ARMS <i>Room: Newbridge Ballroom Foyer</i>			
0800 - 0825	Welcome by SDT Ultrasound Solutions <i>Room: Newbridge Ballroom</i>			
0825 - 0850	Keynote by Michael Rosenberg, President, WPV Corp (Introduction by ARMS) Redefining Maintenance - A Flexible Thinker® Approach Room: Newbridge Ballroom			
0900 - 1000	Asset Strategy Management - Delivering Predictable Performance Jason Ballentine <i>Room: Delivered</i>	SMRP Best Practices Metrics Workshop Paul R. Casto <i>Room: Sealed</i>	MMP Module 1 "An Integrated Strategy for Maintenance Management" Day Two Leonard Middleton <i>Room: Signed</i>	Becoming a Certified Asset Management Assessor Day Two Suzane Greeman & Dharmen Dhaliyah <i>Room: Shakers</i>
1000 - 1015	Break			
1015 - 1200	(Continued) Asset Strategy Management - Delivering Predictable Performance Jason Ballentine <i>Room: Delivered</i>	(Continued) SMRP Best Practices Metrics Workshop Paul R. Casto <i>Room: Sealed</i>	(Continued) MMP Module 1 "An Integrated Strategy for Maintenance Management" Day Two Leonard Middleton <i>Room: Signed</i>	(Continued) Becoming a Certified Asset Management Assessor Day Two Suzane Greeman & Dharmen Dhaliyah <i>Room: Shakers</i>
1200 - 1300	Lunch Sponsored by: Hippo CMMS			
1300 - 1430	Gate Keeping the Store: The Key To a Sustainable Materials Management James Kovacevic <i>Room: Delivered</i>	(Continued) SMRP Best Practices Metrics Workshop Paul R. Casto <i>Room: Sealed</i>	(Continued) MMP Module 1 "An Integrated Strategy for Maintenance Management" Day Two Leonard Middleton <i>Room: Signed</i>	(Continued) Becoming a Certified Asset Management Assessor Day Two Suzane Greeman & Dharmen Dhaliyah <i>Room: Shakers</i>
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1630 - 1830	Networking Reception / Exhibitor Hall Grand Opening - Dine Around Sponsored by: UE Systems <i>Room: Newbridge Ballroom Foyer & Grand Scheme Ballroom Foyer</i>			
1830 - 2030	ICML Exam <i>Room: Delivered</i>		CMRP Exam <i>Room: Sealed</i>	

The Diefenbunker Museum Tour

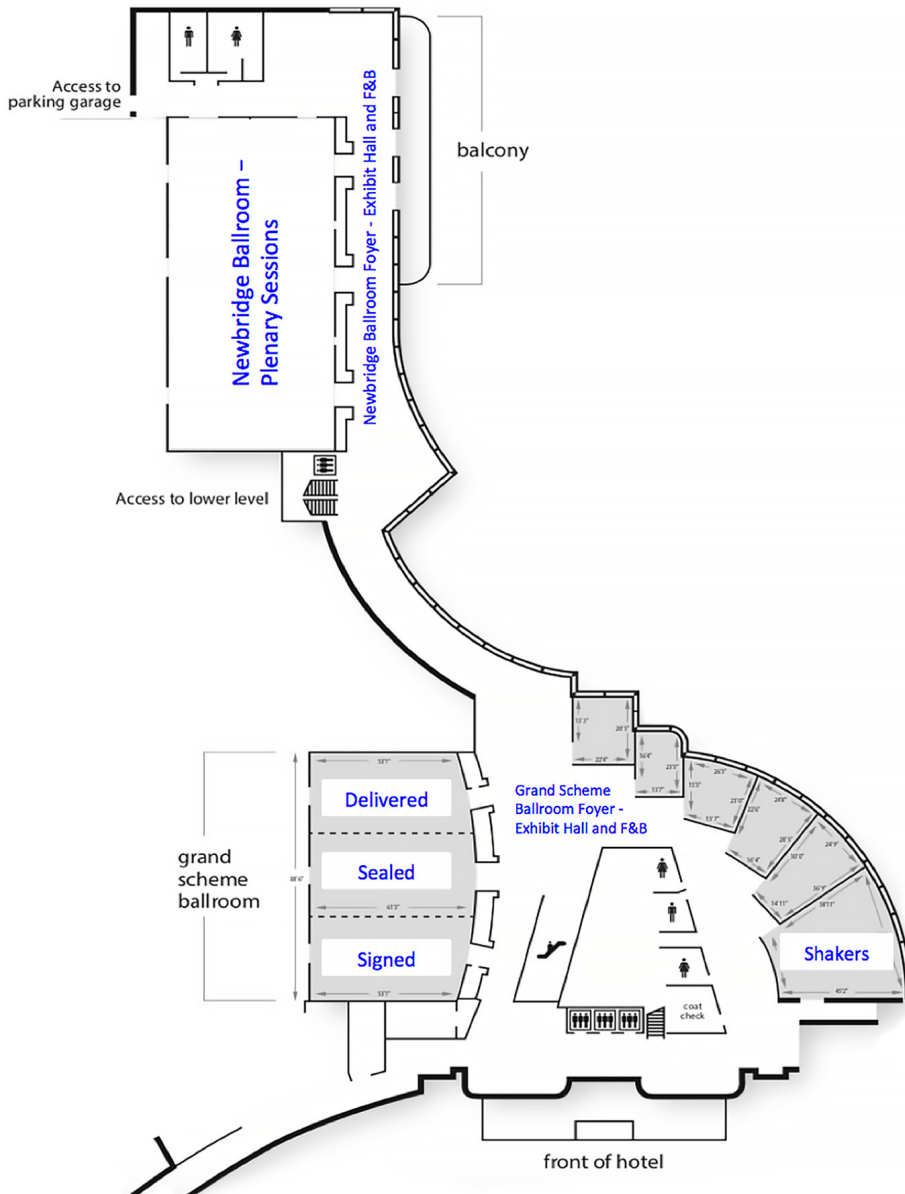
Wednesday, September 26, 2018 (Sessions)

0715 - 0800	Registration & Breakfast <i>Room: Newbridge Ballroom Foyer</i>			
0800 - 0825	Welcome by SKF <i>Room: Newbridge Ballroom</i>			
0825 - 0850	Keynote by Marc René de Cotret, Director of Service Transformation, City of Ottawa The Role of Digital in an Innovative City Room: Newbridge Ballroom			
0900 - 1000	Reliability Engineer - What Should be Your Role? Tor Idhammar <i>Room: Delivered</i>	Proactive Reliability: Developing Strategic Plans to Redesign Your Future Robert Kalwarowsky <i>Room: Sealed</i>	Maturing Assets Towards Higher Reliability Agwu Emele Agwu <i>Room: Signed</i>	(French) Création d'un centre d'expertise en Maintenance et fiabilité chez Cascades Martin Ross <i>Room: Shakers</i>
1000 - 1005	Break (Exhibitors & Author's Corner) <i>Room: Newbridge Ballroom Foyer</i>			
1005 - 1050	Increasing Operational Service Levels Using Preventative Maintenance Optimization Strategies: A Case Study of the LINK APM System at Toronto Pearson International Airport Sean Best & Michael Riseborough <i>Room: Delivered</i>	Challenges in Implementing Reliability and Asset Integrity Transformation program Abdul-Rahman S Al-Shahrani & Sultan Ahmed Mujeebuddin <i>Room: Sealed</i>	Enabling Excellence in Asset Management Nigel D'Souza <i>Room: Signed</i>	(French) Do you know the health of your assets in real time? Mattieu Berlinguette <i>Room: Shakers</i>
1100 - 1145	Outsourcing a part of physical asset management - How to decide William (Bill) Mercer <i>Room: Delivered</i>	Engaging Operations to Join the Reliability Journey Through a Successful Performance Improvement Initiative Jason Ballentine <i>Room: Sealed</i>	Strategic Approach of Optimizing OPEX through Reliability, Availability and Maintainability (RAM) Study Venkata Srikanth Sura <i>Room: Signed</i>	(French) Best Practice to Hire Performant Technical Trade Employees Philippe Mercure <i>Room: Shakers</i>
1145 - 1315	Lunch (Exhibitors & Author's Corner) <i>Room: Newbridge Ballroom Foyer</i> CAMA Exam (Starts at 1230 - 1430) <i>Room: Signed</i>			
1315 - 1450	MRO Roundtable <i>Room: Newbridge Ballroom</i>			
1500 - 1545	Democratizing Predictive Maintenance Through the Industrial Internet of Things James Reyes-Picknell & Przemek Tomczak <i>Room: Delivered</i>	Applying Lean principles to optimize the CCTV Sewer Inspection Program Scott Gray & Scott Laberge <i>Room: Sealed</i>	Professional Development Options Overview Cindy Snedden, P.Eng <i>Room: Signed</i>	(French) Improving Reliability Through a Better Understanding of Degradation Joël Fortin <i>Room: Shakers</i>
1545 - 1600	Break (Exhibitors & Author's Corner) <i>Room: Newbridge Ballroom Foyer</i>			
1600 - 1645	We Need to Do Better Ken J. Brown <i>Room: Delivered</i>	The Lies Reliability & Maintenance Professionals Tell Shon Isenhour <i>Room: Sealed</i>	Establishing a Governance Model to Support Asset Management Development and Sustenance Roop Lutchman <i>Room: Signed</i>	(French) Gestion des Actifs (Asset Management Program) - Un projet du service maintenance ou un projet d'usine? Serge Mathieu <i>Room: Shakers</i>
1800	Awards Dinner (Canadian War Museum) <i>Sponsored By: SKF</i>			

Thursday, September 27, 2018 (Sessions)

0715 - 0800	Registration & Breakfast <i>Room: Newbridge Ballroom Foyer</i>		
0800 - 0825	Welcome by UE Systems <i>Room: Newbridge Ballroom</i>		
0825 - 0850	Keynote by Mike Crowell, Director of Maintenance, Irving Forest Services Accelerating Management Talent in Partnership With PEMAC <i>Room: Newbridge Ballroom</i>		
0900 - 0945	Safer Condition Based Maintenance Inspections: Case Study of Implementation at an Ontario Bottling Facility Rudy Wodrich & Scott Thornton <i>Room: Delivered</i>	Airborne/Structure Borne Ultrasound - 24/7 Monitoring and the IIoT Sean Miller <i>Room: Sealed</i>	From Reactive to Proactive Asset Management - Challenges and Opportunities Dr. Ananth Seshan <i>Room: Signed</i>
0945 - 1005	Break (Exhibitors & Author's Corner) <i>Room: Newbridge Ballroom Foyer</i>		
1005 - 1050	Isolated Phase Bus Duct Inspection & Maintenance Best Practices Mohsen Tarassoly <i>Room: Delivered</i>	Implementing the Maintenance and Reliability Best Practice in Our Plant Martin Gagnon, Annie-Claude Landreville & Jessica Sutton <i>Room: Sealed</i>	Solutions to Enterprise Implementation: Evidence From the Front Lines of Utility Project Management Faisal Shaheen <i>Room: Signed</i>
1100 - 1145	"Pumping" Technology into Our "Sewage Pumping Stations" Clarence F. Walters <i>Room: Delivered</i>	The Most Important Asset on Your CMMS: People Erika Mazza <i>Room: Sealed</i>	Extending the Enterprise to Close the Performance Gap in the Built Environment Through Better Collaboration and Use of Digital Technology Seb Cox <i>Room: Signed</i>
1200 - 1330	Lunch (Exhibitors & Author's Corner) <i>Room: Newbridge Ballroom Foyer</i>		
1330 - 1430	A Quick Review of the Milestones in the Journey Towards Excellence in the Physical Asset Management at a Challenging Company Hossein Naderi Fashtali & Somayeh Ekra Ahmadsani <i>Room: Delivered</i>	Social Neuroscience: The Brains Behind Creating the Right Safety and Reliability Culture Dennis Heinzlmeir <i>Room: Sealed</i>	Capstone Presentations MMP Capstone Business Award: Selected Winner: Sameh Abadir Project Name: Line Automation at Skjodt Barret Foods MMP Capstone Technical Award: Selected Winner: John Colwell Project Name: Keg Room Revival Project AMP Capstone Award: Selected Winner: Tonnie Trim Project Name: Amine Filtration System <i>Room: Signed</i>
1445 - 1545	TBD <i>Room: Newbridge Ballroom</i>		
1545 - 1600	Closing Comments & Grand Prize Draw <i>Room: Newbridge Ballroom</i>		

PEMAC reserves the right to make changes to the conference schedule right up until the day of the event.



Speakers & Presenters

KEYNOTE PRESENTERS

Susan Lubell, P.Eng MBA MMP CAMA - National President PEMAC

Susan Lubell currently serves as President for the Plant Engineering Maintenance Association of Canada (PEMAC) and teaches for the Maintenance Management Professional (MMP) certification program. She specializes in operational excellence with a strong focus on asset management and reliability strategy, cost-effective lean maintenance programs, and continuous improvement. She brings more than 20 years of practical experience to drive asset management, operations, and maintenance business decisions in producer companies, and is the author of "Root Cause Analysis Made Simple - Driving Bottom Line Improvements by Preventing One Failure at a Time."

Time: Monday, September 24 @ 8:25am

Location: Newbridge Ballroom



Michael Rosenberg President, WPV Corp

Michael Rosenberg, MBA is an internationally-recognized thought leader in building cultures of innovation, change leadership and thinking lean. He is a widely published writer whose work has been featured in magazines and newspapers such as The Globe and Mail. He is the author of The Flexible Thinker®: A Guide to Creative Wealth and The Flexible Thinker® Guide to Extreme Career Performance (co-written with Sandra Boyd) and the lead author of the Carswell-Thomson book Best Practices of Employee Retention. He co-authored the white paper with Richard Beer on how the Flexible Thinker® tools were used to help deal with disruptive influences within the maintenance department at a large boat manufacturer. A former improviser and comedy writer, Michael combines the tools from improvisation to help individuals and organizations change paradigms that hinder performance within the workplace. Michael is currently the President of WPV Corp., which specializes in building health and safety solutions in the area of workplace violence and harassment.

Time: Tuesday, September 25 @ 8:25am

Location: Newbridge Ballroom



**Marc René de Cotret, Director of Service Transformation,
City of Ottawa**

Marc René de Cotret joined the City of Ottawa's Service Innovation and Performance Department as the Director of Service Transformation in April 2017.

He leads the Service Transformation team, which is responsible for delivering improvements to the City's strategic and organizational business planning processes, employee engagement and internal communications, process improvement programs and organizational effectiveness efforts to cultivate an organizational culture of innovation and client-centric service delivery.

Prior to joining the City, Marc was an Associate Partner with the Digital Operations practice of IBM's Global Business Services. He has extensive consulting experience in strategy, business operations, and transformation. He has worked for large-scale clients in numerous sectors including all levels of government, public safety, health care, construction and engineering, defence, pulp & paper, industrial shipbuilding, nuclear regulatory, and taxation.

Marc has an MBA in Business Administration from the University of Ottawa.

Time: Wednesday, September 26 @ 8:25am

Location: Newbridge Ballroom



**Mike Crowell, Director of Maintenance Pulp and Paper Division,
Irving Pulp and Paper Limited**

Mike is the Director of Maintenance for Irving Forest Services, a division of JDIrving based in Saint John, N.B. With more than 28 years of practical experience in operations and maintenance, Mike's focus is to create and deliver a platform of consistent leading practice performance across the company's manufacturing network and to provide rewarding career opportunities for maintenance professionals. Mike spent many summers in the mill environment while completing his Certificate in Applied Science and B.Sc. in Math at Acadia University and his B.Sc. in mechanical engineering at the Technical University of Nova Scotia. Prior to entering his current role, Mike was the GM of the specialty papers mill in Saint John. Mike is currently a member of the Board of Directors for the Plant Engineering and Maintenance Association of Canada (PEMAC) and recently completed his MMP certification with PEMAC.

Time: Thursday, September 27 @ 8:25am

Location: Newbridge Ballroom



Special Features:

TAKE THE TEST

PEMAC is offering three exams during MainTrain. It is a great opportunity to become accredited while you're in Ottawa.

Certified Asset Management Assessor Exam

The CAMA Exam was developed by leading not-for-profit asset management organizations* and has been verified through rigorous technical and psychometric testing. The exam complies with the GFMAM's Competency Specification for an ISO 55001 Asset Management Auditor/Assessor, ensuring that successful applicants have the minimum required knowledge to be an ISO 55001 assessor.

Wednesday, September 26, 12:30 - 14:30 in Room: *Signed*

To register, go to the registration table for more information.

* AMC, ABRAMAN, IFRAMI, PEMAC, SMRP



ICML Exam

The ICML Exam will be available to take during the conference. Pre-registration of the exam is required.

Tuesday, September 25, 18:30 - 21:30 in Room: *Delivered*

To register, go to the registration table for more information.



CMRP Exam

The Certified Maintenance & Reliability Professional (CMRP) exam will be available to take at MainTrain. Managed by the Society for Maintenance and Reliability Professionals (SMRP) the CMRP is accredited by the American National Standards Institute (ANSI), which follows ISO standards for its accreditation and processes.

Tuesday, Sep 25, 18:30 - 21:30 in Room in Room: *Sealed*

To register, go to the registration table for more information.



PEMAC General Meeting

A PEMAC General Members Meeting will be held on-site at the conference. All PEMAC members are invited to attend.

Monday, September 24 from 19:00 to 20:30

LOCATION: Delivered



PEMAC AWARDS BANQUET: AWARDS DINNER (CANADIAN WAR MUSEUM)

Join PEMAC for our annual awards banquet sponsored by SKF, taking place off-site at the Canadian War Museum on Wednesday, September 26. Guests will arrive via shuttle for an evening of networking, fun and honouring of some inspiring people in asset management, maintenance and reliability. Guests depart the conference hotel starting at 5:30pm and can return starting at 9:30pm. Dinner and transportation from the conference hotel is included for conference participants. Extra tickets for guests (who do not have a MainTrain conference pass) can be purchased for **\$110.00** at the registration desk.



MRO Roundtable

MCs: Mario Cywinski, Editor, and Michael King, Publisher, Machinery and Equipment MRO Magazine

Two hundred heads are better than one and together we are likely to have more than 3,000 years of experience at this session. In an effort to gather the wisdom from the floor, we'll break the conference attendees into six discussion groups. Each group will discuss two topics with two different facilitators whose task will be to summarize the discussions for the wider group. Insights gathered will be compiled and shared with the conference attendees and a subsequent article in Machinery and Equipment MRO Magazine.

Time: Wednesday, September 26 @ 1315 - 1450

Location: Newbridge Ballroom

Career Listings

Did you know that PEMAC has a career listings service? Did you know that corporate and allied members receive 1/2 price on career listings? To showcase some of the great career opportunities available. Be sure to stop by and visit the career listings board near the registration desk to see the kind of great opportunities that are available every day on www.pemac.org. For more information about posting your career opportunities, email admin@pemac.org or call (905) 823-7255 ext 2.

Grand Prize Draw

PEMAC is excited to be offering a grand prize draw this year! Join us for the Conference Wrap Up presentation taking place at the end of the conference and you will be entered into a draw for one full conference registration to MainTrain 2019 in Edmonton! You must be present to be entered into the draw and the winner will be announced during the wrap up.

Thursday, September 27: 15:45 To 16:00 Location: Newbridge Ballroom

2018 Content

As shown in the schedule, Monday and Tuesday are workshops; Wednesday and Thursday are 45 minute Sessions

Monday, September 24, 2018 - 08:25

Keynote Address

Susan Lubell, P.Eng MBA MMP CAMA - National President PEMAC

Welcome and Opening Keynote

A focus on cost effective reliable production continues to drive successful results for Canadian organizations in a changing economy. This session will focus on why a strategic approach to asset management coupled with the tactical execution of maintenance are critical factors to address both competition for global products and delivery of local utility services.

Monday, September 24, 2018 - 09:00

IIOT, Big Data and Artificial Intelligence Fundamental Workshop

Blair Fraser - Leader of Digital Transformation, Lakeside Process Controls Ltd.

With Rajiv Anand/Rajiv Anand - Co-Founder and CEO, Quartic.ai

And Xiaozhou Wang - Chief Data Scientist, Quartic.ai

Asset condition management (ACM) teaches on-condition monitoring for any business with high-capital assets looking to harness machine learning to avoid unexpected failures and control rising equipment maintenance costs. Many businesses are already using continuous condition monitoring technologies like IoT-connected devices. However, beyond simple threshold alerts from condition sensors, extracting real value from the data generated by these sensors for true predictive monitoring requires expert analysis and interpretation. To generate actionable results from condition sensor data, these experts also apply knowledge about the asset's operation. This limits the value that IoT-enabled ACM can provide to the business. By taking the next step and using advanced algorithms and machine learning to automatically extract real-time insights that drive action, we can now achieve the full potential of ACM. Modern, cognitive online ACM takes data from multiple and varied sources, combines it, and uses AI and machine learning techniques to anticipate equipment failure before it happens. Many reliability professionals recognize the potential of IoT, machine learning, and AI, and are trying to learn these technologies. However, the available training is complex and assumes learners have a background in data science and computer programming. This workshop will provide a beginners' level understanding of terminology, basic concepts, and techniques to determine how and where you can apply AI in your facilities for meaningful ACM.

iCAST: Introduction to Critical Asset Surveillance Technology

Rudy Wodrich - Vice-president Engineering Services, IRISS Inc.

With Drew Walts - Training Manager, IRISS inc.

You can use critical asset surveillance technology (CAST) programs to do the following: reduce repair cost exposure by 66%; make a significant impact on the total cost of ownership by reducing indirect costs associated with maintenance & spares; reduce man-hours required for energized inspections by up to 95%; significantly improve MTBF by adding to increased uptime and decreased downtime; maximize the return on safety and comply with NFPA70E; remove maintenance-induced failures by simplifying energized maintenance inspection processes; and increase ROI on CAST equipment and training. This workshop will also provide you with a primer in both ultrasound and infrared inspection technology and how these can be used for electrical equipment condition assessment. You'll leave with a basic understanding of both technologies to continue in the future with Level 1 certified training in either technology. Finally, you'll discover the use of electrical maintenance safety devices, IoT online monitoring strategies, and intelligent asset tags as part of a CMMS/EAMS asset strategy. And, you'll understand the core elements to start a reliability journey with your critical electrical infrastructure.

MMP Module 1 "An Integrated Strategy for Maintenance Management" Day One

Leonard Middleton

PEMAC's Maintenance Management Professional (MMP) program provides training and accreditation to those aspiring to, or already in, maintenance management or supervisory positions. Certified MMPs are qualified to provide cost effective management of a business's physical assets. There are eight modules to the MMP program. Module 1 is being offered as a workshop at MainTrain over a two day period.

Based on the course text, Uptime, Module 1 develops the framework for thinking about a strategic approach to maintenance management that is integrated with the business. Draining on the elements presented in the "Maintenance Excellence Pyramid" of Uptime, participant in Module 1 will learn how strategy, people, basic care, materials management, performance management, work management, support systems, and tools such as RCM (Reliability Centered Maintenance) and RCFA (Root Cause Failure Analysis) can work together to build a culture of excellence.

Becoming a Certified Asset Management Assessor

Suzane Greeman - Above Ground Asset Manager/Lead Maintenance Engineer,

Veolia North America

With Dharmen Dhaliyah - Corporate Asset Manager, Town of Halton Hills

No time to study for the CAMA Exam? Reduce your pre-exam stress by spending time with the experts. This 8 hour course is designed to give individuals (with the necessary background experience) an efficient overview of the recommended preparation material for the CAMA Exam. These materials provide insight into: (1) the ISO 5500x framework of documents, (2) the GFMAM Asset Management Landscape and (3) the GFMAM Competency Specification which indicates what ISO 5500x Asset Management Systems Assessors must know to complete that task effectively. All these documents are available and can be studied independently. But why not take advantage of the opportunity to discuss with a group of peers and the facilitators?



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Monday, September 24, 2018 - 13:00

It Is Time to Rethink Asset Criticality - Introducing Risk-based Asset Criticality Analysis (R-b Aca)!

Suzane Greeman, CAMA, CAMP, CMRP, SM-IEEE - Above-ground Asset Manager, Veolia North America (Winnipeg)

With Jesús R. Sifonte, BSME, MMRE, CMRP, P.E.

Risk-based asset criticality assessment (R-b Aca) shifts the conversation solely from the impact of failure to the risk of failure. This is important as it is a conversation in which it's possible for an asset with a lower severity of failure to have a higher risk than one with a higher impact – based on its probability of failure. In this workshop, we'll present R-b Aca as a valid asset and maintenance management concept and the benefits of adopting this approach. You'll receive guidance on how to create an asset criticality matrix by defining and weighting static business drivers to form consequences of failure and by developing dynamic business drivers into probabilities of failure. You'll be presented with two practical applications of risk-based asset criticality: one premised on the RCM-R® book and the other on a collection of asset management experiences in several asset-intensive industries. You'll also have the opportunity to apply both methodologies in a group setting to real-life assets drawn from a variety of industries. As a bonus, the co-author of RCM-R® will demonstrate line of sight to the RCM methodology outlined in his book. You'll discover the answers to such questions as What is the value of asset criticality and what does it impact? What information is needed to execute an R-b Aca? What factors can influence a lower criticality ranking? When should we not apply risk-based asset criticality?

Tuesday, September 25, 2018 - 08:25

Keynote Redefining Maintenance - A Flexible Thinker® Approach

Michael Rosenberg - President, WPV Corp.

What do you call a situation where you have to create something from nothing? How about dealing with situations where everything is breaking down and everybody is blaming everyone else instead of solving the problem? Sounds like a typical day in the life of an asset management professional. In this highly interactive session, you'll learn about the tools you can use to help build effective maintenance teams. You'll find out how these tools are used in the "real world" to help solve maintenance issues in real time. You'll be able to apply these tools to think differently; create ownership for change; and communicate in a way that builds solutions and not blame.

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Tuesday, September 25, 2018 - 09:00

Asset Strategy Management - Delivering Predictable Performance

Jason Ballentine - General Manager of Engineering, ARMS Reliability

Most organizations are wasting millions of dollars through ineffective asset strategy management (ASM). The performance of assets and systems is based on the maintenance strategy that's executed. ERP systems support the execution of tasks; however, if you're executing ineffective tasks then performance will suffer. Poor reliability of equipment and processes can have sudden and disastrous effects on an organization's ability to deliver operational or project objectives. Reliability problems can lead to unexpected downtime, poor quality product or service, missed operational targets, significant remedial costs, poor safety, and a rise in incidents. Many organizations are executing inconsistent or suboptimal strategies, leading to variable results, continued underperformance, and significant failures and outages. Institutionalizing ASM into the operation reduces failures, downtime, and risk, and, as a consequence, total cost of operations is lower. ASM removes the inconsistent outcomes from asset strategies, allows for any pockets of excellence to be deployed to all relevant assets, and drives continuous reliability improvement. In this workshop, we'll explore the difference between work management and ASM, and develop the road map to ensure this important relationship delivers real value.

SMRP Best Practices Metrics Workshop

Paul R. Casto - Body of Knowledge Director, On behalf of the Society of Maintenance and Reliability Professionals

How do you know which metrics truly matter? The Society of Maintenance and Reliability Professionals (SMRP) has done much work in developing this body of knowledge and publishing it as the SMRP Compendium of Metrics. In this interactive workshop, you'll gain insights into the latest thinking on maintenance and reliability (M&R) metrics, and learn the process of using the metric hierarchy for linking M&R activities to your organization's strategy. Using this proven process, M&R practitioners will be able to demonstrate M&R's impact on an organization. We'll discuss best practices on the metrics used for the five pillars of the body of knowledge for M&R practitioners. SMRP's Best Practices Committee will present a hands-on workshop reviewing the standard definitions and application of common maintenance and reliability metrics. You'll understand how to measure performance consistently, make valid comparisons, and provide guidance to your organization on how to use these indicators. You'll be able to examine the process for determining the right set of metrics for your business; understand the process (metric hierarchy) for linking M&R metrics to your organization's strategy; identify metrics that measure efficiency, effectiveness, and strategic execution; practise calculating M&R metrics using formulas and sample data sets; and much more.

Tuesday, September 25, 2018 - 13:00

Gate Keeping the Storeroom: The Key to a Sustainable Materials Management

James Kovacevic - Principal Instructor, Eruditio

Sustainable storerooms and spare parts programs require the right management and governance to be successful. Without this governance, the storeroom inventory continues to grow and leads to an abundance of obsolete spares. The main way to govern the number of spares in the storeroom is to implement a policy and procedure in which all new parts requests are evaluated, prioritized, and ultimately accepted or rejected for stocking in the storeroom. This management practice can yield significant improvements not only for your maintenance department but also for your business. In this workshop, you'll understand the financial impact of poor materials management; understand how to develop a process to evaluate the spare parts for stocking levels and criticality; understand what data is required to evaluate spare parts and how to govern it; and develop a governance process for controlling what spare parts make it into the storeroom.

Wednesday, September 26, 2018 - 08:025

Keynote Address

The Role of Digital in an Innovative City

Marc René de Cotret - Director of Service Transformation, City of Ottawa

Increasing client expectations in the digital world are driving "digital transformation" across all sectors, including government. This presentation will discuss the digital transformation cities are undergoing and how these changes are enabling more innovative service delivery, providing citizens with a more personalized and engaged experience.

Wednesday, September 26, 2018 - 09:00

Reliability Engineer - What should be your role?

Tor Idhammar - President, IDCON, Inc.

Reliability engineers in industry are often thrown into the position with very little knowledge about what they're supposed to do. Or, sometimes, the organization isn't set up to take advantage of what a reliability engineer can do. Sometimes these engineers have the theoretical knowledge from college but never learned what will be used in the real world. This presentation will address all the basics a new reliability engineer must know. We'll focus on managing existing equipment and provide an overview of the reliability engineer's role in new equipment procurement and design. We've found that the role of a reliability engineer is not often clear; in fact, many reliability engineers end up doing a lot of work not always related to what they should do.

Proactive Reliability, Developing strategic plans to redesign your future

Robert Kalwarowsky - Senior Reliability Engineer, Fluid Life

More and more, industrial sites understand the need for reliability engineering. They form a reliability group then staff it with young engineers with the best intentions. Without strategic planning, however, the group soon gets caught up in the reactive issues of the day. They try to apply tools like RCM, but without long-term scheduling they struggle to attain support or

resources. They look over the criticality analysis and pick assets to focus on, but is that the best value? In this workshop, we'll review the process of integrating criticality, bad actors, and value destruction to develop a multi-year strategic plan. We'll cover the stakeholders and all the inputs needed to create a strategic plan that will redesign the future of your organization. We'll cover plan execution and refinement on a rolling yearly basis, and also define a process to project the value of a reliability initiative, measure that value against the objectives, and prove that value to executives.

Maturing Assets towards Higher Reliability

Agwu Emele Agwu - Planner, Heavy Oil Group, Husky Energy Inc

With increasing process complexities, stakeholder expectations, and rising industrial disasters, we need a standardized maturity improvement framework for process organizations that leverages high-reliability organization (HRO) theory. There has been an exponential increase in the frequency, severity, and impact of organizational process-related disasters since the 1970s. This increase has coincided with increased process couplings, interdependencies, and technological complexities in process-driven organizations. Nevertheless, HROs continue to operate mindfully with minimal incidents. They have developed the resilience to withstand the potential effects of incidents should they occur. Given that most industrial disasters have occurred in organizations and industries not considered true HROs, we'll argue that improving the organizational reliability maturity of organizations through the application of organizational learning from these HROs across diverse organizations in different industries could potentially enhance process safety.

(French) Création d'un centre d'expertise en Maintenance et fiabilité chez Cascades

Martin Ross - Directeur Centre d'expertise Maintenance et Fiabilité, Cascades Inc

Présentation sur la démarche pour la création d'un centre d'expertise (CoE) en Maintenance et Fiabilité. Le CoE coordonne la planification et la réalisation d'initiatives alignées avec les objectifs d'affaires de Cascades et supporte l'optimisation des activités de maintenance des 3 groupes qui composent Cascades. Les vice-présidents Efficacité Opérationnelle des 3 groupes ainsi que le président de Cascades ont donné leur aval lors d'une rencontre en février 2017 à la proposition de mise en place d'une organisation commune de services en maintenance et fiabilité pour l'ensemble des usines de Cascades. Lors de cette présentation nous vous exposerons la démarche pour y arriver : Étendu du projet, Mission & vision, échéancier, la stratégie de Benchmarking et les tactiques ciblées pour le déploiement d'un programme.

Wednesday, September 26, 2018 - 10:05

Increasing Operational Service Levels Using Preventative Maintenance Optimization Strategies: A Case Study of the LINK APM System at Toronto Pearson International Airport

Sean Best - Operations and Maintenance Manager, Doppelmayr Cable Car Limited
With Michael Riseborough - Director of Terminal Infrastructure, Greater Toronto Airports Authority

In 2017, the LINK Automated People Mover (APM) at Toronto Pearson International Airport transported an average of 24,000 passengers per day – a 20% increase in passenger traffic from 2015, according to a 2017 report by the GTAA. To increase operational service levels, preventative maintenance optimization (PMO) initiatives were undertaken in 2015 and 2016 in co-ordination

with the APM owner, manufacturer, and O&M service provider. The initiatives were designed to increase the overall day-to-day operational run-time of the LINK system while maintaining existing levels of safety and reliability. In this workshop, we'll use the LINK APM system as a case study to discuss the requirements for successful PMO implementation, which include interorganizational communication and co-operation, RCM strategies, and due diligence as it relates to safety-related subsystems and processes. We'll also offer a blueprint for similar optimization strategies.

Challenges in Implementing A Reliability and Asset Integrity Transformation Program

Abdul-Rahman S Al-Shahrani - Manager, Electrical, Asset Engineering Department, Petrokemya

With Sultan Ahmed Mujeebuddin - Senior Engineer, Petrokemya

For any large petrochemical complex like ours, where nine huge plants produce millions of tons of hydrocarbons, launching any change program is a daunting task. Recently, management decided that the asset integrity & reliability maturity level of all our assets should be elevated to transform the reliability of the assets and to ensure that the company be a top-quartile performer amongst global petrochemical manufacturers. New manufacturing standards, procedures, strategies, and policies were developed, and a complete asset integrity and reliability transformation model based on four important dimensions – design, operation, maintenance, and people culture – was developed to cover the complete asset lifecycle. Having developed a robust transformation program will not guarantee the expected asset integrity and reliability improvement; rather, there are challenges at every level to implement the transformation plan. In this workshop, we'll discuss the challenges we faced in implementing the program and share our innumerable lessons learned.



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Enabling Excellence in Asset Management**Nigel D'Souza - Asset Management Consultant, City of Mississauga**

In this workshop, you'll learn to foster an asset management culture within your organization with a focus on methods to form alignment, engagement, and internal championing. Based on the speaker's experience and lessons learned in establishing and updating a program for large government organizations with diverse and complex portfolios, he'll present his approach for the City of Mississauga. He'll provide an overview on how to keep the program organized with large amounts of data and information, while staying committed to a fundamental view of purpose.

(French) Do you know the health of your assets in real time?**Mattieu Berlinguette - Business development manager - Reliability, Laurentide Controls**

With modern predictive technologies and outstanding predictive maintenance specialists, we have increasingly accurate and forward-thinking diagnostics of the health of our assets. On the other hand, the information from these specialists sometimes resides in several different places. We'll illustrate how you can aggregate all of this information at your fingertips, turning knowledge into insight. This will directly translate into how you can harvest the payback from PdM while continuously improving your reliability program.

Wednesday, September 26, 2018 - 11:00**Outsourcing a Part of Physical Asset Management - How to Decide****William (Bill) Mercer - Principal, Self-employed Consultant**

Asset-intensive industries have changed radically because of regulatory and technological changes. This has allowed many new investors to enter existing markets and has forced established companies to consider new markets for growth. Simultaneously, new technology has levelled the playing field as high efficiency changes economies of scale and market dynamics. To manage their risks and uncertainties associated with new technology, while still focusing on improving profits, many asset owners look to outsourcing part of the physical asset management responsibility to specialized operations and maintenance companies. The owners gain advantages through the transfer of non-core activities to the supplier to reduce costs or to reduce risk. Whatever the rationale for outsourcing, the owner requires a method to evaluate outsourcing options to determine which is right for it, given its own internal capacity and strategy. The decision process must be capable of selecting the right type of service level based on a number of tangible and intangible strategic criteria. This type of multi-faceted decision necessitates process based on a sound theoretical foundation that can compare different options against the critical criteria of lifecycle costs, revenue influences, quality, health and safety, and other key drivers. In this workshop, we'll look at a case study model using the analytical hierarchy process (AHP) as a tool capable of evaluating this type of diverse multi-levelled decision. AHP is simple and straightforward, and uses an easy-to-understand hierarchical structure to sort criteria based on their relative importance.

Engaging Operations to Join the Reliability Journey Through a Successful Performance Improvement Initiative**Jason Ballentine - General Manager of Engineering, ARMS Reliability**

R&M professionals are typically the main drivers and beneficiaries of an RCM or similar reliability study at a facility. However, when you invite operations and other key business personnel to participate, we've found it often opens their eyes to M&R improvement opportunities and helps paint the picture for future joint improvement efforts. Organizations are then able to operate with the most efficiency, driving toward a world-class reliability program with plant-wide buy-in for the reliability improvement journey. This presentation will discuss a case study of a joint client and partner consultant approach of choosing a machine or line performing below desired performance levels. Using an RCM approach to improve maintenance strategies, the organization experienced reduced downtime and less labour reallocation and idle time, and gained many instant wins like increased visibility in the maintenance budget and increased collaboration between facilities.

Strategic Approach of Optimizing OPEX Through Reliability, Availability and Maintainability (RAM) Study**Venkata Srikanth Sura - Principal Engineer (Reliability), Petronas Carigali Sdn Bhd**

The oil & gas industry has continuously increased its requirements in terms of safety and reliability performance. Together with higher market competitiveness, operators are forced to implement better management strategies for these systems in order to improve their reliability, availability, maintainability, and productivity to meet those demanding and challenging environments. An operational RAM study was performed to simulate reliability, availability, and maintainability by using historical data to identify and quantify equipment or systems that contribute to production inefficiency. This requires the study of operational experience and know-how facilities. In this presentation, you'll learn how to apply RAM methodology as a decision tool for the management in making an informed business decision to change the operating philosophy of a 50-year-producing offshore field to suit a current challenging environment.

(French) Best Practice to Hire Performant Technical Trade Employees**Philippe Mercure - Managing Partner, OptiTest**

Hiring talented maintenance employees isn't an easy task for maintenance, operations, and HR leaders. In today's manufacturing economy, automation and computerization have taken over vast sections of the industry, leaving technical employees to hold greater control on assembly assets and to make more decisions on how to deploy, manage, and maintain equipment. Manufacturers need to hire talented technical employees who have the skills to do many jobs and have the capability to adjust, repair, and troubleshoot various types of equipment. Relying on a CV, past experience, and academic background is no longer adequate. To solve this issue, innovative executives are turning to "hands-on" and troubleshooting simulation mechanical and electrical assessments before they hire. In this workshop, you'll learn how these innovative leaders include these simulator assessments in their hiring process to get the data they need for making smart hiring decisions.

Wednesday, September 26, 2018 - 15:00

Democratizing Predictive Maintenance Through the Industrial Internet of Things

James Reyes-Picknell - Principal Consultant, Conscious Asset

With Przemek Tomczak - Senior VP IIoT and Utilities, Kx Systems, Inc.

With all the talk about big data and the IIoT, many are asking how can we use this in maintenance? The IIoT enables us to put sensors in any location where we might want to collect and analyze equipment condition and performance data. There are companies that offer predictive maintenance services, and some companies do this for themselves, in-house. Typically, it's the larger companies that can afford this, but democratization has meant this has become available to a much broader market. But there are hurdles to taking advantage of this sort of continuous monitoring program, even for your most critical equipment. One, it's expensive, whether you do it in-house or outsource. And two, there are data bottlenecks. Condition monitoring data comes in huge volumes and it's all time-sensitive. Even if you can afford it, you need a data handling network with a lot of capacity. In this workshop, we'll present a viable technical solution to the data bottleneck problem – based on a solution already proven in financial securities markets – that opens up these possibilities in the realm of plant continuous condition monitoring.

Applying Lean Principles to Optimize the CCTV Sewer Inspection Program

Scott Gray, P.Eng. - Program Manager, Maintenance Planning, Public Works & Environmental Services Department, City of Ottawa

With Scott Laberge - Manager, Wastewater Collection, Public Works & Environmental Services Department, City of Ottawa

The City of Ottawa's wastewater collection network comprises approximately 3,000 km of sanitary pipe, 2,600 km of stormwater pipe, 85 sanitary and stormwater pump stations, and 100 km of combined sewer pipe. In recent years, projects have been implemented that include a risk-based approach to the inspection program and the lean process improvement. Lean aims to reduce process steps and variation – thereby increasing efficiency. In this workshop, we'll summarize the lean process improvement and implementation, and share our experience in applying lean principles to the CCTV sewer inspection program, which delivered a 50% reduction in the number of process steps and a 400% increase in CCTV production. Lean is a methodology that's based on a collaborative team effort to improve performance by systemically removing waste. You can apply lean to a wide range of business processes, but it's typically used for the elimination of eight kinds of waste: defects, overproduction, waiting, non-utilized talent, transportation, inventory, motion, and extra-processing.

Professional Development Options Overview

Cindy Snedden, P.Eng - Executive Director, PEMAC

Take control of your professional journey. There has never been a better time to develop a career in maintenance, reliability and asset management. The number of options for education and certification are multiplying at a dizzying rate and it's very exciting to witness this area of practice develop as a recognized and necessary career path. As the landscape is changing quickly it's a little tricky to choose from among various options when many of them are new. In this session we give an overview of short courses, diploma and degree programs, masters programs and the types of certifications that are available from professional organizations around the world. We will also provide a decision tool to help ask the right questions to identify which path might be the best fit for you.

(French) Improving Reliability Through a Better Understanding of Degradation Mechanisms

Joël Fortin - Materials and Asset Integrity Management Specialist, Norda Stelo Co

Data analysis has always been the cornerstone of reliability analysis, whether it's failure data such as MTBF or condition-based data such as vibration levels and thickness measurements. With the advent of Industry 4.0 and the smart factory, data analysis takes an even greater importance through automation and data exchange. When it comes to attaining best-in-class reliability, we think the data collected needs to be interpreted through the lens of a fundamental understanding of physical degradation mechanisms. In this workshop, we'll illustrate this through four case studies involving fixed equipment: calciner failures in the petrochemical industry; UT thickness monitoring of tank floors in a tank farm; tailing pipeline premature failure; and FBR failure analysis.

Wednesday, September 26, 2018 - 16:00

We Need to Do Better

Ken J. Brown - President, Eco Fluid Center Ltd.

There are many new lubricants, bearings, seals, and lube accessories, but we need to do better. Ninety percent of rolling element bearings don't reach their design life, and the main contributing factors relate to lubrication. This can mean the wrong type, too much, too little, not often enough, or not applied right. Generally, such things can be easily corrected, but a learning, productive working environment is key. Similar to hydraulics, the leading cause of equipment issues is contamination. This can be water, dirt, and/or wear. In this presentation, we'll give you a number of examples and study results, as well as present some solutions.

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The Lies Reliability & Maintenance Professionals Tell**Shon Isenhour, CMRP, CAMA - Partner, Eruditio**

The tenets of reliability can be fun and messy. In this workshop, we'll help you better understand these concepts and where the confusion creeps in. This session will be great for those studying for an exam or for those who want to geek out. You'll leave with new knowledge, interesting facts, and explainable models that you can take back to your facility. We'll look at turbo implementations; the criticality of criticality (both of them); the P-F interval; the funky failure curves of RCM; why root cause analysis is a lie; and why predictive tools can't predict. Bring your own confusions and a willingness to participate in the dialogue as we break each of these down and toss out a few lies.

Establishing a Governance Model to Support Asset Management Development and Sustenance**Roop Lutchman, Global Leader, Asset Management, GHD Advisory**

The structural configuration of an organizational design is the way work is divided and how it achieves co-ordination among its various work activities around the assets' lifecycles. An organizational design structure resolves two basic tasks to get work done: dividing up the work into logical units, which enables performance management, and ensuring the work gets done by providing the co-ordination and control of work. We'll look at four models and discuss their advantages and disadvantages and present suitable information on typical roles and responsibilities that will be reflective of the selected model. The goal of asset management (AM) is to ensure that an organization's staff is always working on the right activities at the right time, for the right reason, and for the right cost. The AM governance model is intended to ensure there is effective collaboration and co-ordination to make this happen around all business processes. With the right AM governance model, overall AM program development can be expedited and new ways of working can be quickly integrated into the organization's AM culture. In this presentation, we'll provide the actual results from a number of case studies to demonstrate the value of designing and implementing the most appropriate AM governance model for your organization.

(French) Gestion des Actifs (Asset Management Program) - Un projet du service maintenance ou un projet d'usine?**Serge Mathieu - President, Prosygma**

Les projets d'amélioration de la performance et de l'efficacité des équipements sont fréquemment sous la responsabilité du service de la maintenance alors que l'ensemble des services seront sollicités en cours de déploiement. Que ce soit la production, le magasin et la gestion des pièces de rechange, l'ingénierie, les ressources humaines et même les finances; leur contribution est essentielle au succès et à l'atteinte des résultats souhaités. L'amélioration de la performance de nos actifs implique nécessairement la participation du personnel, la mise à jour de nos processus de gestion en fonction du contexte opérationnel et l'innovation technologique. Dans quelle mesure ces éléments contribuent à l'atteinte des résultats? Ce type de projet peut se définir comme suit: 80% ce sont les gens et 20% les processus et la technologie. Lors de la présentation, nous aborderons les causes qui influent sur le Taux de Rendement Global (TRG). Nous présenterons de quelle façon la contribution des différents partenaires d'affaires de l'entreprise peuvent faire de ce type de projet un succès.

Thursday, September 27, 2018 - 08:025

Keynote Address**Accelerating Management Talent in partnership with PEMAC****Mike Crowell - Director of Maintenance, Irving Forest Services**

People are the key aspect of creating and delivering a platform of consistent leading practice performance in any organization. Within our maintenance structure at JDIrving, we have been able to integrate the MMP certification program into the training and development plans of our maintenance professionals, as employees progress through their career. In this discussion we will provide a great example of how PEMAC's mission for individuals to connect, learn, and contribute has accelerated the talent and performance within our company.

Thursday, September 27, 2018 - 09:00

Safer Condition-based Maintenance Inspections: Case Study of Implementation at an Ontario Bottling Facility**Rudy Wodrich - Vice-president Engineering Services, IRISS Inc.****With Scott Thornton - Business Development Manager, DTM Consulting Services Inc.**

Electrical maintenance surveillance device (EMSD) technologies refer to condition-based monitoring technologies and equipment used every day to inspect electrical distribution assets. These surveillance and inspection systems determine the condition of the individual asset or system being inspected and include, but are not limited to, infrared thermography, airborne ultrasound, motor current analysis, partial discharge testing, corona cameras, and visual inspections. The implementation challenge is that the inspection and surveillance equipment used yield their most valuable results when inspecting electrical distribution equipment that's operating under full load conditions. Doing so while working within the confines of CSA Z462 guidelines can be challenging when the equipment is both of danger to maintenance personnel and of value to the process they're powering. The surveillance equipment implemented normally requires direct access or direct line of sight to the energized components inside the electrical system. This requires panels to be open, which is extremely dangerous. In this workshop, we'll show you how EMSD technologies maintain the energized compartment's closed and guarded condition, ensuring that personnel are not endangered. You'll learn how the design allows the required test equipment to be used safely at any time, especially when equipment is under full load conditions. We'll also present a case study from an Ontario beverage bottling facility, demonstrating how these devices can be easily retrofitted on existing electrical distribution equipment to become the nexus for an electrical infrastructure reliability program.

Airborne/Structure Borne Ultrasound - 24/7 Monitoring and the IIoT**Sean Miller, CMRP - Canadian Operations Manager, UE Systems Inc.****With Blair Fraser - Leader of Digital Transformation, Lakeside Process Controls Ltd.**

Airborne/structure borne ultrasound has been around for more than 40 years and has grown with the times – from handheld instruments to permanent and continuous monitoring systems. The fundamental technology behind how ultrasound works hasn't changed; the onset of online monitoring, the IIoT, and AI increases the applications in which this technology can be used. We'll introduce the technological advancements of ultrasound and how it's now being applied to many

facilities and industries, through IIoT and AI – including smartphone apps; advanced software to analogue and digital continuous monitoring; and AI. We'll also present various Lakeside Process Controls case studies that will outline 24/7 monitoring successes using both analogue and digital systems. Lakeside has helped to increase the reliability of many of its clients' critical assets by applying IIoT and by using ultrasonic sensors to provide predictive analytics.

From Reactive to Proactive Asset Management - Challenges and Opportunities

Dr. Ananth Seshan - CEO and Managing Director, 5G Automatika Ltd.

In this workshop, we'll present a practical transformational model for organizations to transform from a reactive regime of asset management to a proactive one. The model comprises thematic transformational processes for the production and maintenance departments within an organization with clearly identified goals. We'll also cover the following: the practical need/ challenges in the horizontal integration of production and maintenance; the implementation of smart technologies as a strategy to improve asset performance; and case study examples. We'll also highlight the benefits of such a model from a corporate perspective in terms of risk mitigation, profitability improvement, and return on assets improvement, and we'll delve into the cultural transformation of viewing maintenance as a driver of profitability of production operations as opposed to a driver of cost.

Thursday, September 27, 2018 - 10:00

Isolated Phase Bus Duct Inspection & Maintenance Best Practices

Mohsen Tarassoly - Director of Sales & Business Development, Electrical Builders, Inc. (EBI)

The purpose of this presentation is to educate the audience on best practices that have been identified for analysis, inspection, cleaning, and maintenance of the bus duct systems of the power generation facility. Many plant operations and maintenance managers ignore the bus duct system, forgetting it is a system critical component in the power plant that does not have redundancy AND is connected to expensive plant assets on both ends. Common statements made before a bus duct failure include "It has no moving parts, what could go wrong with it." Or, "It has run without issue since the plant was built, why do we need to open it up now?" And another common statement; "We inspect the exterior of the bus and do IR scans of the enclosure regularly." Inevitably, plants that operate under any of these philosophies have or will experience a failure of their bus. This presentation will explain why. The presentation will review numerous case studies from over forty years of field findings from Electrical Builders, Inc. (EBI). Presentation topics will include IEEE industry standards, inspection options (both online and offline), testing requirements,

life extension options, current trends in predictive maintenance programs, the ramifications of poorly and/or inadequately maintained bus duct systems, and best practices for bus duct system inspection and maintenance.

Implementing the Maintenance and Reliability Best Practice in our Plant

Martin Gagnon - Supervisor COE Continuous Improvement, Cascades Canada Inc.
With Annie-Claude Landreville - Organisationnel Effectiveness Advisor, Cascades Canada Inc.
With Jessica Sutton - Organizational Effectiveness Advisor, Cascades Canada Inc.

In this workshop, we'll show you the standard process we used to implement best practices in M&R at Cascades North America. We started with a project plan developed by the plant team, and then, to gain everyone's support, we developed a presentation to explain the What, Why, and How of performing maintenance in new ways.

Solutions to Enterprise Implementation: Evidence from the front lines of utility project management

Faisal Shaheen - Manager, Enterprise Work Management System, City of Toronto, Water Division

Municipal utilities face several challenges in successfully implementing and administering enterprise solutions. One of the most critical tasks in an increasingly complex environment is ensuring that software solutions keep pace with the demands of compliance, efficiency, and service delivery. Operations management experts have introduced a plethora of new management terms in an attempt to unpack and identify solution deployment success factors. However, practical experience suggests the opposite; the focus should be on establishing common requirements to meet current and forecasted business needs. Recent experiences from the City of Toronto with respect to procuring and introducing software solutions illustrate the importance of documenting and validating specific and interdivisional needs as "anchors" for project management. In this presentation, we'll provide an update on the Toronto Water experience with the City of Toronto's Enterprise Work Management Solution implementation, from the perspective of divisional project management. We'll also touch on key strategic deliverables that have been achieved at this point as a function of the program layout and outline the benefits of segmenting a project into defined stages with key decisions bound to deliverables.

Thursday, September 27, 2018 - 11:00

"Pumping" Technology Into Our "Sewage Pumping Stations"

Clarence F. Walters - Manager, Mechanical Systems, Greater Toronto Airports Authority

"Sustainability through reliability" – presented at the 2015 MainTrain Conference – focused on the rapid growth of passenger flow at Toronto Pearson Airport and how, due to this growth, we were experiencing a high number of plumbing drainage failures. We carried out an RCA on our system and came up with changes in how we would prevent drainage failures. The changes we made dealt with our plumbing design standards; food and beverage tenant fats; oil and organics recovery system; lease agreements; and maintenance practices. However, that was only the starting point. In this presentation, we'll discuss RCA conducted, the failures experienced, and the enhancements and improvements we made to make our system more reliable.



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The most important asset on your CMMS: The most important asset on your CMMS: People

Erika Mazza - CMMS, Asset Data Management, Regional Municipality of Durham

Industrial maintenance has evolved from simple repair when it breaks to amazing predictable strategies. With these come the need of handling more data to enable better decision-making and effective work management. Unfortunately, we tend to forget who would feed this data into our sophisticated CMMS: people. Any EAM system is like a racehorse. It can help us to win the race – only if it's well-fed, cared for, groomed, and trained properly; all these actions are done by people who need to understand how their functions are vital for the health of the horse and for the ultimate goal of winning the race. In asset management, people are very complicated assets, usually performing complex activities as part of a bigger picture, and CMMS/EAM systems are just the tools humans use to perform as intended; therefore, people should always be a priority. In this presentation, we'll explore the evolution of CMMS and how human reliability is a key component for the success in the implementation and use of any software solution for EAM.

Extending the Enterprise to Close the Performance Gap in the Built Environment Through Better Collaboration and Use of Digital Technology

Seb Cox - Consultant, Project Management Services, EllisDon

The structure and workflows of the AECOO (Architecture, Engineering, Construction, Owner Operator) industry are experiencing rapid disruption and redefinition as a result of globalization, digitization, and clients' drivers for sustainability and lifecycle value. We're beginning to see infrastructure projects and sustainment services that are evolving in ways not totally dissimilar to advanced industries such as defence aerospace, which has itself already achieved a high level of asset management maturity with advanced systems thinking and enterprise risk management. Although some of the technologies that enable the "360" product lifecycle management and integrated logistics support of defence aerospace are transferrable to the built environment, the road map to a more mature ecosystem of capability that can deliver and sustain better asset system value still requires considerable change management and education across every dimension of an organization. In this workshop, we'll draw on three separate case studies where EllisDon has provided lifecycle sustainment services and consulting to clients from institutional, commercial, and industrial industries and government/transportation. We'll discuss lessons learned, implementation challenges, and unfulfilled opportunities relating to intelligent infrastructure and asset information management strategies that embraced supply chain innovation and collaboration.

Thursday, September 27, 2018 - 13:30

A Quick Review of the Milestones in the Journey Towards Excellence in the Physical Asset Management at a Challenging Company

Hossein Naderi Fashtali - Deputy of Electrical and Mechanical Installation General Department of Building & Facilities - Chairman of Technical Committee - Electrical Equipment and Systems for Railway, Iranian National Electrotechnical Committee, RAI With Somayeh Ekra Ahmadsani - Expert Mechanical Facilities, RAI

In this workshop, we'll discuss how the infrastructure department of one of the largest railway companies in the Middle East began its journey towards excellence in physical asset management; the highlights of the steps taken to date; and the achievements. We'll review the first step in the development of physical asset management, assessment, best class practices, gap analysis, how strategies were developed, key accomplishments in the areas of change management; and reliability approaches at the equipment level and the process side. We'll also look at future milestones: developing an excellence model and road map for the company; introducing the developed VMOSA; reviewing and optimizing PMs in a cost-effective manner; developing tools for contract management and cost saving; implementing the first phase of 5S; and managing the work execution.

Social Neuroscience: The Brains Behind Creating the Right Safety and Reliability Culture

Dennis Heinzlmeir - Business Manager, Jacobs

Neuroscience has become a rising star in the sky of management theory. The notion that we can improve behaviour and interaction in the workplace to enhance performance, creativity, innovation, reliability, and safety by understanding how our brain works is on the rise. Neuroscience goes deeper into behaviour than traditional approaches in developing a safety and reliability culture, by exploring the various layers of the mind that are crucial to shaping and sustaining positive attitudes to, and belief in, safety and reliability. In essence, neuroscience brings a new understanding of the relationships between brain, mind, and behaviour. Understanding how the brain develops and how these developments influence our behaviour is of interest to managers and scientists alike. Social cognitive neuroscience is concerned with the brain's role in social and emotional aspects of human cognition and behaviour – in other words, how we relate to each other and how this influences our behaviour. People's interactions and relationships with others are strong indicators of safety and reliability behaviour. These everyday interactions impact decision-making, risk-taking, judgment, and attention to tasks. This presenter has hands-on experience on how to develop a safety culture that leads to an increase in productivity and quality.

Asset Management Professional (AMP) Certification



The AMP Certificate program is designed to build organizational capacity for excellence in Asset Management by developing relevant knowledge and skills across disciplines for those responsible for Asset Management decision-making and design of the Asset Management system.

The program is offered exclusively at Humber College, in association with PEMAC.

www.pemac.org/education

Maintenance Management Professional (MMP) Certification



The MMP program provides training and certification to those aspiring to, or already in, maintenance management or supervisory positions enabling them to align their work with the Asset Management strategies and plans of the organization.

For more information about the program that is offered at 16 colleges, universities and technical institutes across Canada, visit: www.pemac.org/education

Becoming a Certified Asset Management Assessor Course



This course helps practitioners establish their global credentials in asset management knowledge and comprehension as it prepares them for WPIAM's CAMA certification exam. CAMA certification demonstrates understanding of asset management and the new standard for management systems for AM, ISO 5500x.

The course is offered online through Northern Lakes College, in association with PEMAC.

visit: www.pemac.org/education



PEMAC Acknowledgements

On behalf of the Board of Directors and the conference attendees, we would like to extend a big thank you to the MainTrain 2018 planning committee, PEMAC staff, and all of the on-site member volunteers that have made this year's conference a success. Your time, effort, and careful attention to making this a truly successful conference shines through.

Committee Chair:

Devesh Shah, Program Manager, Maintenance Manager, City of Ottawa

Committee Members:

Gregg Bentley, Armtec LP

Michel Cote, PROSYGMA

Matthew Knight, City of Ottawa

Sean Miller, UE Systems Inc.

James Reyes-Picknell, Conscious Group Inc.

Jean-François Séguin, KPMG LLP

Cindy Snedden, PEMAC

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Alp Bora, Rio Tinto Alcan

Nigel D'Souza, City of Mississauga

On-site Support Staff:

Nicolle Guillen, Education and Professional Development Manager, PEMAC

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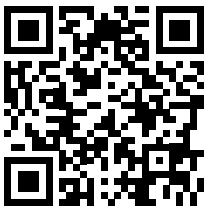
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Claire Russell, PEMAC Head Office

Acacia Grunsell, PEMAC Head Office

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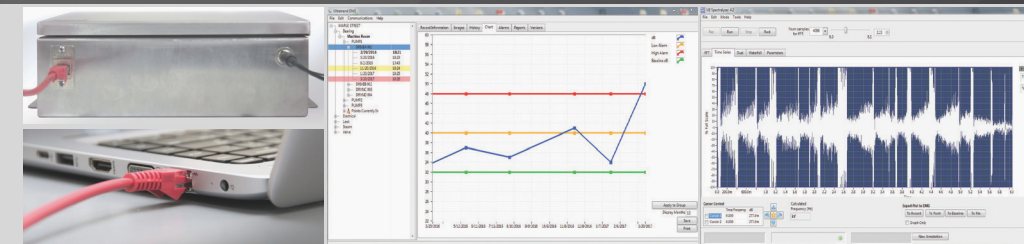
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The ultrasound approach

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This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.This image shows a full page of blank, lined paper. It features approximately 20 evenly spaced horizontal grey lines across its entire surface, providing a guide for handwriting or typing. The paper is otherwise completely empty, with no margins, text, or other markings.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.[illegible]

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.This image shows a full page of blank, lined paper. It features approximately 28 horizontal blue or grey lines spaced evenly apart, typical of notebook paper. The lines extend across the entire width of the page, leaving small margins at the top and bottom. There are no vertical lines, text, or other markings on the page.

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Looking Ahead *MainTrain 2019*

MainTrain 2019 is coming to Edmonton!

MainTrain 2019 will be taking place in Canada's festival city: Edmonton! It has more than 30 festivals each year, including the [Edmonton Folk Music Festival](#), which has been running since 1980. Alberta's capital and second largest city in the province, Edmonton is rich in culture and a hub for North American businesses. Our conference will be held in the city's West End—only a 15-minute drive to Edmonton's business core and, conveniently located close to West Edmonton Mall, which boasts more than 800 stores and services. Edmonton is a cultural and educational centre, so take in the sights: explore one of the many parks or visit the country's largest planetarium or the telephone museum!

When: September 16 to September 19, 2019

Where: Doubletree by Hilton, West Edmonton

MainTrain has been helping Maintenance, Reliability and Asset Management professionals for 15 years, and each year the conference is becoming stronger because of your contribution. Don't miss your chance to learn from expert speakers, as well as meet old friends and make new ones. We look forward to seeing you again!

More information about MainTrain 2019 will be available on www.pemac.org. Stay tuned!



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